Complete Summary

GUIDELINE TITLE

Guidelines for the diagnosis and treatment of pediculosis capitis (head lice) in children and adults 2008.

BIBLIOGRAPHIC SOURCE(S)

University of Texas, School of Nursing, Family Nurse Practitioner Program. Guidelines for the diagnosis and treatment of pediculosis capitis (head lice) in children and adults. Austin (TX): University of Texas, School of Nursing; 2008 May. 17 p. [19 references]

GUIDELINE STATUS

This is the current release of this guideline.

This guideline updates a previous version: University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program. Recommendations for the treatment of pediculosis capitis (head lice) in children. Austin (TX): University of Texas at Austin, School of Nursing; 2002 May. 13 p. [41 references]

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Pediculosis capitis (head lice)

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Prevention
Treatment

CLINICAL SPECIALTY

Dermatology
Family Practice
Infectious Diseases
Internal Medicine
Nursing
Pediatrics

INTENDED USERS

Advanced Practice Nurses
Health Care Providers
Managed Care Organizations
Nurses
Physician Assistants
Physicians
Public Health Departments

GUIDELINE OBJECTIVE(S)

To present a national guideline on the management of pediculosis capitis

TARGET POPULATION

Children and adults in the United States with pediculosis capitis

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis/Evaluation

1. Detection of head lice by direct visualization of head and scalp
2. Detection using fine-tooth louse comb

Management/Treatment

1. Pediculicidal regimens
    - Permethrin 1%
    - Pyrethrin 0.33% and piperonyl butoxide 4%
    - Malathion 0.5% lotion
    - Ivermectin oral 200 micrograms/kg
    - Permethrin 1% and/or trimethoprim and sulfamethoxazole
    - Lindane 1% shampoo
2. Alternative regimen for removal of head lice
    - Combing wet hair with conditioner and fine-tooth comb

3. Other management considerations
    - Treatment of family members
    - Treatment of personal hair care items
    - Laundering of bedding
    - Notification of schools or child care facilities
    - Resistance to pediculicides
    - Hair washing considerations before, during, and after treatment with a pediculocide

MAJOR OUTCOMES CONSIDERED

- Alleviation of signs and symptoms
- Prevention of sequelae of infestation
- Prevention of transmission
- Toxicity of drug treatment

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

To select evidence for critical appraisal by the group the Medline (U.S. National Library of Medicine) EBSCO database was searched for the years 2004-2008 using the keywords "head lice" and "pediculosis capitis" in the title, abstract, and indexing forms. Additional resources were found using bibliographies of relevant articles.

NUMBER OF SOURCE DOCUMENTS

19

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus
Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Quality of Evidence (Based on the U.S. Preventive Services Task Force Ratings)

Good: Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes.

Fair: Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies, generalizability to routine practice, or indirect nature of the evidence of health outcomes.

Poor: Evidence is insufficient to assess the effects on health outcomes because of limited number of power of studies, important flaws in their designs or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Review of the literature with group consensus. Consideration was given to patient preferences and length of treatment.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Guidelines were drafted by graduate students following review of the literature.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Grading of Recommendations (Based on the U.S. Preventive Services Task Force Ratings)

A. There is good evidence that the recommendation improves important health outcomes. Benefits substantially outweigh harms.

B. There is at least fair evidence that the recommendation improves important health outcomes. Benefits outweigh harms.

C. There is at least fair evidence that the service can improve health outcomes but the balance of benefits and harms is too close to justify a general recommendation.

D. There is at least fair evidence that the recommendation is ineffective or that harms outweigh benefits.

I. Evidence that the service is effective is lacking, of poor quality or conflicting and the balance of benefits and harms cannot be determined.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The Family Nurse Practitioner students submitted the draft recommendations to the University of Texas at Austin School of Nursing faculty for review. The draft was later revised to incorporate faculty recommendations.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Strength of recommendations (A, B, C, D, I) and quality of evidence (good, fair, poor) are defined at the end of "Major Recommendations" field.

Diagnosis

- Finding a live louse or nymph on the scalp or a viable egg within 1cm of the scalp (Elston, 2005; Mumcuoglu et al., 2006; Roberts & Burgess, 2005)
    - Nits that are within 6 mm from the scalp are usually viable and are highly suggestive of an active infestation (Ko & Elston, 2004; Leung, Fong, & Pinto-Rojas, 2005).
    - Nits that are more than 1cm from the scalp are generally not viable (Leung, Fong, & Pinto-Rojas, 2005).
    - Using a light source, a magnifying lens and parting the hair at the scalp may aid in detection (Sciscione & Krause-Parello, 2007).
- Lice eggs or nits may be easier to detect, especially behind the ears or at the nape of the neck
- Using a fine-tooth louse comb is 4 times more efficient than direct visual examination and twice as fast (Elston, 2005; Mumcuoglu et al, 2006).

Evidence Good, Recommendation A

Recommended Regimens

- 1% Permethrin is treatment of choice because of efficacy and lack of toxicity (Burkhart, 2004; Burkhart & Burkhart, 2006; Downs, 2004; Elston, 2005; Hansen, 2004; Ko & Elston, 2004; Lebwohl, Clark, & Levitt, 2007; Leung, Fong, & Pinto-Rojas, 2005).
    - 1% Permethrin cream rinse is applied to the hair and scalp for 10 minutes and then rinsed off.
    - A second treatment is advised 7 to 10 days later to ensure cure.

Evidence Good, Recommendation B

- Pyrethrin 0.33% and piperonyl butoxide 4% (Burkhart, 2004; Burkhart & Burkhart, 2006; Elston, 2005; Hansen, 2004; Ko & Elston, 2004; Lebwohl, Clark, & Levitt, 2007; Leung, Fong, & Pinto-Rojas, 2005).
    - Product is applied to hair that is first shampooed and then towel dried, left on for 10 minutes, and then rinsed off.
    - These agents are not ovicidal and application should be repeated 7 days later to ensure cure.

Evidence Good, Recommendation B

- 0.5% Malathion lotion (Burkhart, 2004; Burkhart & Burkhart, 2006; Downs, 2004; Elston, 2005; Hansen, 2004; Ko & Elston, 2004; Lebwohl, Clark, & Levitt, 2007; Leung, Fong, & Pinto-Rojas, 2005; Meinking et al., 2007; West, 2004).
    - The lotion is applied to the hair until thoroughly moistened, left to air dry, and then rinsed off after 8 to 12 hours.
        - A drawback to its use is its lengthy application time (Meinking et al., 2007).
        - Some authors report success with 0.5% malathion gel formulation, which only requires a 30-minute application time (Meinking et al., 2007).
    - The application should be repeated in 7 to 9 days if live lice are still present at that time.
    - Safety and efficacy have not been established in children less than 6 years of age.
    - Preferred first line treatment in regions where pyrethroid resistance has been observed.

Evidence Good, Recommendation B

Alternative Regimens

- Combing of wet hair using a conditioner of choice and a fine-tooth louse comb (Downs, 2004; Elston, 2005; Ibarra et al., 2007; Ko & Elston, 2004; Lebwohl, Clark, & Levitt, 2007; Mumcuoglu et al., 2007; Tebruegge & Runnacles, 2007).
    - Wet combing is treatment of choice for children younger than 2 years of age (Leung, Fong, & Pinto-Rojas, 2005).
    - Repeat combing needs to be done over 2 weeks on days 1, 5, 9, and 13 to break the life-cycle (Ibarra et al., 2007).
    - Because no pediculicide is 100% ovicidal, removal of nits by wet combing is recommended by some authors (Leung, Fong, & Pinto-Rojas, 2005).

Evidence Good, Recommendation C

- Ivermectin 200 micrograms/kilogram orally (PO) with a repeat dose 2 weeks later (Burkhart, 2004; Burkhart & Burkhart, 2006; Elston, 2005; Dourmishev, Dourmishev, & Schwartz, 2005; Downs, 2004; Ko & Elston, 2004; Lebwohl, Clark, & Levitt, 2007; West, 2004).

- Topical ivermectin holds some promise for the treatment of head lice, but oral ivermectin is the only form licensed for human use in the United States.

Evidence Fair, Recommendation C

- A combination of 1% permethrin and/or trimethoprim 10 mg/kg/day and sulfamethoxazole 50 mg/kg/day in 2 divided doses for 10 days (Ko & Elston, 2004; Lebwohl, Clark, & Levitt, 2007; Leung, Fong, & Pinto-Rojas, 2005).
    - Should only be reserved for cases not responsive to traditional pediculicides or suspected cases of lice-related resistance to therapy.

Evidence Fair, Recommendation C

- Lindane shampoo 1% (60 mL) (Burkhart, 2004; Downs, 2004; Elston, 2005; Ko & Elston, 2004; Lebwohl, Clark, & Levitt, 2007; Leung, Fong, & Pinto-Rojas, 2005; West, 2004).
    - Should be used only in patients who cannot tolerate first-line treatment, or in whom first-line treatment with safer products has failed (Burkhart, 2004; Hansen, 2004).
    - Wash hair with regular shampoo at least 1 hour before applying lindane and dry thoroughly. Do not use any creams, oils, or conditioners.
    - Shake the shampoo well. Apply just enough shampoo to make hair and scalp wet.
    - Throw away any remaining shampoo.
    - Leave the lindane shampoo on hair for exactly 4 minutes. Longer exposure times may cause seizures or other serious problems. Keep hair uncovered during this time.
    - At the end of 4 minutes, use a small amount of warm water to lather the shampoo. Do not use hot water.
    - Wash all of the shampoo off of hair and skin with warm water.
    - Dry hair with a clean towel.
    - Comb hair with a fine tooth comb (nit comb) or use tweezers to remove nits (lice eggs and larvae).
    - Should not be reapplied if initial treatment fails (Burkhart, 2004).

Evidence Good, Recommendation D

Other Management Considerations

- Family members should be treated only if infected (Elewski, 2005; Lebwohl, Clark, & Levitt, 2007; Leung, Fong, & Pinto-Rojas, 2005).
- Personal hair care items should be treated with pediculocides or soaked in hot water (Ko & Elston, 2004; Leung, Fong, & Pinto-Rojas, 2005).
- Bedding should be laundered in hot water of at least 50 degrees Celsius and tumble dried on the hot cycle for 40 minutes, or dry cleaned within 48 hours of contact of head of an infested person (Izri & Chosidow, 2006; Ko & Elston, 2004).
- Schools or child care facilities should be notified so that additional cases can be detected and treated (Ko & Elston, 2004; Lebwohl, Clark, & Levitt, 2007; Mumcuoglu et al., 2007; Sciscione, 2007).

- Resistance to pediculocides has been detected in some areas of the country. Consider resistance in your area when determining treatment (Hansen, 2004; Mumcuoglu et al., 2007).
- Towel dry hair before using treatment as too much water in the hair dilutes the pediculicide, decreasing its efficacy.
- Do not use a cream rinse or conditioner shampoo before using the treatment as it will interfere with the medication.
- Do not wash hair for 1 to 2 days after treatment.
- Long hair may require more than 1 bottle of product per treatment. In most cases, 50 mL of product is required for each application. In those patients with long or thick hair, up to 150 mL may be required.

Evidence Fair, Recommendation C

Follow-Up

- If infestation persists after 2 treatments consider evaluating for correct use of product and an alternative agent should be used (Hansen, 2004).
    - Causes of treatment failure in head lice infestations include misdiagnosis, noncompliance or not following product instructions, reinfestation, or resistance of lice to the pediculocide.

Evidence Good, Recommendation B

Special Considerations

- Children younger than 2 years of age
    - Wet combing is the only treatment recommended for children younger than 2 years (Leung, Fong, & Pinto-Rojas, 2005).

Evidence Good, Recommendation A

- Pregnancy
    - Permethrin, pyrethrin, and malathion are category 'B' drugs.

Evidence Good, Recommendation A

Definitions:

Quality of Evidence (Based on U.S. Preventive Services Task Force [USPSTF] Ratings)

Good: Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes.

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Poor: Evidence is insufficient to assess the effects on health outcomes because of limited number of power of studies, important flaws in their designs or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

Grading of Recommendations (Based on USPSTF Ratings)

A. There is good evidence that the recommendation improves important health outcomes. Benefits substantially outweigh harms.

B. There is at least fair evidence that the recommendation improves important health outcomes. Benefits outweigh harms.

C. There is at least fair evidence that the service can improve health outcomes but the balance of benefits and harms is too close to justify a general recommendation.

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I. Evidence that the service is effective is lacking, of poor quality or conflicting and the balance of benefits and harms cannot be determined.

CLINICAL ALGORITHM(S)

A clinical algorithm on detection, treatment, and management of head lice is provided in the original guideline document.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for selected recommendations (see "Major Recommendations" field).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Appropriate diagnosis and treatment of pediculosis capitis
- Decreased transmission of pediculosis capitis
- Decreased re-infection rate
- Decreased risk of secondary infections

POTENTIAL HARMS

- Pediculicides may cause burning, stinging, itching, or irritation at the site of application.
- Conjunctivitis has been reported with the use of malathion following contact with the eyes.
- Malathion is flammable and should therefore be kept away from open flames and electric heat sources such as hair dryers and curling irons.
- Possible significant adverse reactions can occur with the use of ivermectin and trimethoprim/sulfamethoxazole, so consider patient risk factors and consult a drug reference before prescribing.
- Exposure to lindane shampoo for longer than 4 minutes may cause seizures or other serious problems.

Pregnancy Considerations

Permethrin, pyrethrin, and malathion are category 'B' drugs.

CONTRAINDICATIONS

CONTRAINDICATIONS

- Contraindications for permethrin include hypersensitivity to pyrethroid, pyrethrin, chrysanthemums, or any component of the formulation. The lotion is also contraindicated for use in infants less than two months of age.
- Contraindications for the use of pyrethrin include hypersensitivity to pyrethrins, ragweed, chrysanthemums, or any component of the formulation.
- Contraindications for the use of malathion include hypersensitivity to malathion or any component of the formulation, and use in neonates or infants.
- Contraindications to Ivermectin therapy are allergic sensitization, nervous system disorders, pregnancy, and lactation. Ivermectin therapy should not be recommended for children younger than 5 years or less than 15 kg in weight.
- Contraindications for trimethoprim/sulfamethoxazole include hypersensitivity to any sulfa drug, trimethoprim, or any component of the formulation, porphyria, megaloblastic anemia due to folate deficiency, infants less than two months of age, marked hepatic damage, severe renal disease, and pregnancy (at term).

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- The vast majority of trials reviewed included only children as the majority of infestations occur between the ages of three and 11.
- These recommendations are meant to serve as a source of clinical guidance. Health care providers should always consider the individual clinical circumstances of each person in the context of local disease prevalence as well as resistance. These guidelines focus on the treatment and counseling of individual patients and do not address other components of a community that are important in pediculosis capitis detection and prevention, such as schools and daycare centers.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Clinical Algorithm

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

University of Texas, School of Nursing, Family Nurse Practitioner Program. Guidelines for the diagnosis and treatment of pediculosis capitis (head lice) in children and adults. Austin (TX): University of Texas, School of Nursing; 2008 May. 17 p. [19 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2002 May (revised 2008 May)

GUIDELINE DEVELOPER(S)

University of Texas at Austin School of Nursing, Family Nurse Practitioner Program - Academic Institution

SOURCE(S) OF FUNDING

Not stated

GUIDELINE COMMITTEE

Practice Guidelines Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of this guideline.

This guideline updates a previous version: University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program. Recommendations for the treatment of pediculosis capitis (head lice) in children. Austin (TX): University of Texas at Austin, School of Nursing; 2002 May. 13 p. [41 references]

GUIDELINE AVAILABILITY

Electronic copies: None available.

Print copies: Available from the University of Texas at Austin, School of Nursing, 1700 Red River, Austin, Texas, 78701-1499

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on October 3, 2002. The information was verified by the guideline developer on October 16, 2002. This summary was updated by ECRI Institute on September 18, 2008.

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Date Modified: 11/24/2008